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<p>(21) International Application Number: PCT/FI87/00106</p> <p>(22) International Filing Date: 25 August 1987 (25.08.87)</p> <p>(31) Priority Application Number: 863444</p> <p>(32) Priority Date: 26 August 1986 (26.08.86)</p> <p>(33) Priority Country: FI</p> <p>(71)(72) Applicants and Inventors: OUNASLEHTO, Erkki [FI/FI]; Mäntytie 11, SF-26510 Uotila (FI). RENFORSS, Matti [FI/FI]; Pohjanniityntie 18, SF-20960 Turku (FI).</p> <p>(74) Agent: BERGGREN OY AB; PB 16, SF-00101 Helsinki (FI).</p> <p>(81) Designated States: AT (European patent), BE (European patent), CH (European patent), DE (European patent), FR (European patent), GB (European patent), IT (European patent), LU (European patent), NL (European patent), SE (European patent), US.</p>		<p>Published <i>With international search report. With amended claims. In English translation (filed in Finnish).</i></p>	
<p>(54) Title: FOUNTAIN</p>			
<p>(57) Abstract</p> <p>Fountain, comprising a basin (1) and spraying members for producing a water jet directed essentially upwards from the basin, which spraying members comprise a pipe (3) equipped with a circulation water pump (2), one end of which opens on to the basin (1), the other end (5) being directed essentially upwards from the basin in order to produce the said water jet. According to the invention, the latter essentially upwards directed end (5) of the pipe (3) comprises at least one elongated part (6, 6') telescopically inserted into this end, whereby the elements (5, 6, 6') telescopically inserted into each other comprise internally or in between them one or several channels allowing water to be discharged as the said jet, and in that the upper end of the inmost part (6') comprises a plate (7), which forms a shelter for the fountain when the jet is in action and a table-top or a cover for the basin (1) when the jet is shut. Around the fountain one or several hydraulically adjusted seats may be disposed.</p>			

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Fountain

The present invention relates to a fountain, comprising a basin and spraying members for producing a water jet directed from the basin substantially upwards. The spraying members then comprise a pipe equipped with a circulation water pump, one end of which opens on to the basin and the other end is directed from the basin substantially upwards in order to produce the above water jet.

The purpose of the invention is especially to produce a multi-purpose fountain, which is usable as a table as well. In particular, the purpose of this invention is to produce a fountain for aged people, convalescents and other handicapped, whereby the fountain is surrounded by one or several chairs, the position of which is easily adjustable.

The main characteristics of the invention appear from the enclosed claims.

The present invention is based on the idea that the fountain is also usable as a table by disposing a plate at the end of the above pipe directed substantially upwards from the basin, which plate forms a table-top for the basin when the fountain is disconnected. The above pipe can then be telescopically lengthened or shortened, consisting of a plurality of pipes telescopically inserted into each other, the innermost of which may be solid. In order to produce a jet, the outer diameter of each inner pipe is advantageously at least partly slightly smaller than the inner diameter of the pipe surrounding it, so that water may be discharged through the slots between the pipes in the form of jets. The slot naturally does not have to be continuously surrounding, but can be divided

into several sections. Optionally, slots or openings can be formed in the walls of the telescopically inserted tubes, allowing water to be discharged as the length of telescopic end of the pipe grows, when the circulation water pump is started and hydraulic pressure is generated in the pipe. Owing to the hydraulic pressure, the telescopic end of the pipe extends and then the cover plate at its top end rises, forming a shelter for the jet, which conducts the sprayed water back to the basin in the form of droplets. When the circulation water pump is stopped or the subsequent valve is closed, the plate at the top end of the telescopic part of the pipe sinks by its own weight, since the water inside the pipe is discharged through the above slots or openings, the plate eventually forming a table top for the basin.

The innermost part of the telescopic end of the pipe can of course be a solid arm or bar, provided that its outer diameter is less than the inner diameter of the tube surrounding it, thus allowing water to be discharged between them.

Lamps can be appropriately disposed underneath the plate, advantageously connected to the same power source as the circulation water pump. The leads of the lamps can be led through the telescopic pipe through the bottom of the basin and be connected to the same power source as the circulation water pump. The lamps can be coloured in order to produce a special effect, as the light diffused by them falls on the droplets dropping from the lower surface of the plate covering the fountain. Optionally, or additionally, coloured water can be used.

Thus a decorative fountain has been achieved by means of the invention, the fountain also serving as a table when the fountain is disconnected. In addition, when in the lower posi-

tion, the plate prevents litter from dropping into the basin, thus serving as a cover for the basin as well as a table-top.

When developing the present invention, handicapped persons have been especially taken into consideration, and the purpose has been in particular to develop a usable and decorative fountain for hospitals, hotels, convalescent homes and similar. Thus, the preferred embodiment of the invention comprises one or several hydraulically adjustable seats disposed around the fountain so that the regulating members of the seat are hydraulically or electrically connected to the circulation water pump of the basin and to its power source. The seat regulating members then comprise hydraulic cylinders and rotating pistons, inlet pipes to conduct water to them from the circulation water pump and outlet pipes to return the water into the basin, which then serves as an expansion tank. In addition, the regulating members comprise valves and regulators for electric control of the valves.

In order to allow the use of the above hydraulic regulating members also when the basin serves as a table and the telescopic end supporting the plate of the pipe is unpressurized, a valve has been disposed in the pipe after the circulation water pump, whereby the regulating members of the seats have been hydraulically connected to the pipe between the circulation water pump and the above jet valve. Thus, the circulation water pump is kept in action hydraulically by these regulating members, even though the basin would not operate.

The invention is described below with reference to the enclosed drawings, in which figure 1 represents a vertical projection of the preferred embodiment of the invention, figure 2 represents the same embodiment from above and figure 3 the same embodiment of the embodiment of figure 1, but from the other direction.

As it appears more in detail from the figures, the fountain according to the invention consists of a water-filled basin 1, supported by a conical hollow base 17, which conical base 17 comprises a U-shaped pipe 3, the inlet of which opens on to the bottom 18 of the basin 1 and the opposite end of which extends from the centre of the basin 1 substantially perpendicularly upwards essentially until the level of the edge 19 of the basin. The U-shaped pipe 3 comprises in addition a circulation water pump 2 and a motor 20 driving the pump, the motor being electrically connected to the power source 21. In addition, the pipe 3 comprises a valve 16, by means of which the upwards directed end of the pipe 3 can be entirely closed.

The end of the pipe 3 directed vertically upwards from the bottom of the basin 1 can be telescopically extended, consisting of three tubes 5, 6 and 6' inserted into each other, whereby the inmost tube 6' is a solid bar or a tube the upper end of which is closed, to which upper end a plate 7 has been attached, the shape and size of which are essentially the same as those of the upper edge 19 of the basin, so that the plate 7 forms a cover or a table-top for the basin 1 when the plate 7 is in a low position.

When the circulation water pump 2 is in operation and the valve 16 is open, water flows to the telescopically extendable end of the pipe and under the effect of pressure the elements 6 and 6' of the telescopic end tend to move axially upwards, whereby the plate 7 at the upper end of the inmost tube or bar 6' rises, thus forming a shelter for the basin.

In order to produce a jet the insertable elements 5, 6, 6' of the telescopic end of the pipe 3 have been sized so that the outer diameter of the tube 6 is slightly smaller than the inner diameter of the tube 5 and the outer diameter of the bar

6' is slightly smaller than the inner diameter of the tube 6. Thus, water may be sprayed through the slots between the inserted tubes. The upwards directed motion of the telescopically moving elements 6, 6' has naturally to be limited, so that the elements are not displaced and disengaged.

Optionally or additionally it is conceivable that the tube 6 and 6' comprises openings or slots, which allow the spraying of water from the inside of the tube 6 and 6' diagonally upwards.

On the lower surface of the plate 7 lamps 8 may be additionally provided in order to illuminate the drops falling from the lower surface of the plate 7. The lamps 8 are connected with the power source 21 by means of leads passing through the telescopic end 5, 6, 6' of the pipe 3.

The basin may be surrounded by one or several chairs. For the sake of clarity, the figures illustrate only one chair 9. This chair 9 is connected by a rapid connector 22 to the pipe 12 coming from the valve 16 in order to guide the hydraulic pressure to the regulating members of the chair 9, which comprise hydraulic cylinders 10 and a rotating piston 11. By means of the hydraulic cylinders 10, the distance of the chair to the edge of the basin as well as the vertical position of the chair are adjusted. On the other hand, the position of the back of the chair 9 is adjusted by the rotating piston 11. The chair 9 moves entirely on wheels 23 and rails 24. The motion of the hydraulic cylinders 10 and the rotating piston 11 is adjusted by the magnetic valves 14, which again are electrically adjusted by electric press keys 15 fixed to the arm of the chair 9. The electric functions of the chair 9 are connected to the power source 21 in the conical base of the basin 1. Reference numeral 13 denotes a tube by which the

water is returned from the hydraulic cylinders 10 and the rotating piston back to the basin 1.

The position of the chair can of course be adjusted, besides hydraulically, also merely electrically or pneumatically, hydraulic regulation is however more economical, since the required regulating forces are relatively strong, and these hydraulic functions may be simply connected to the circulation water system of the basin, whereby the circulation water pump 2 of the system may be utilized for generating the hydraulic pressure.

Claims

1. A fountain comprising a basin (1) and spraying members for producing a water jet directed essentially upwards from the basin, the said spraying members comprising a pipe (3) equipped with a circulation water pump (2), one end (4) of the pipe opening on to the basin (1) and the other end (5) being directed essentially upwards from the basin in order to produce the said water jet, characterized in that the latter essentially upwards directed end (5) of the pipe (3) comprises at least one elongated element (6, 6') inserted telescopically into this end, whereby the elements inserted telescopically into each other (5, 6, 6') comprise internally or in between them one or several channels, allowing water to be discharged as the said jet, and in that the upper end of the inmost part (6') comprises a plate (7), which forms a shelter for the fountain when the jet is in action and a table-top or a cover for the basin (1) when the jet is shut.
2. A fountain according to claim 1, characterized in one or several lamps (8) disposed underneath the plate (7), the lamps being electrically connected through the telescopic end (5, 6, 6') of the pipe (3) advantageously to the same power source as the circulation water pump (2).
3. A fountain according to claim 1 or 2, which is surrounded by one or several seats (9), characterized in that the seat comprises members for adjusting its position, which members comprise hydraulic cylinders (10) and/or rotating pistons (11), inlet pipes (12) for conducting water to them from the circulation water pump (2) and outlet pipes (13) for returning the water to the basin (1), which then serves as an expansion tank, as well as electric valves (14) and regulators (15) for electric control of the valves.

4. A fountain according to claim 3, characterized in that the pipe (3) comprises, after the circulation water pump (2), a valve (16), by which water can be conducted to the regulating members of the seat (9) when the upwards directed telescopic end (5, 6, 6') of the pipe is closed and the plate (7) of the basin (1) is in a low position.

AMENDED CLAIMS

[received by the International Bureau on 13 January 1988 (13.01.88)
original claim 2 cancelled ; claims 3 and 4 replaced by new claim 2 (1 page)]

1. A fountain comprising a basin (1) and spraying members for producing a water jet directed essentially upwards from the basin, the said spraying members comprising a pipe (3) equipped with a circulation water pump (2), one end (4) of the pipe opening on to the basin (1) and the other end (5) being directed essentially upwards from the basin in order to produce the said water jet, characterized in that the latter essentially upwards directed end (5) of the pipe (3) comprises at least one elongated element (6, 6') inserted telescopically into this end, whereby the elements inserted telescopically into each other (5, 6, 6') comprise internally or in between them one or several channels, allowing water to be discharged as the said jet, and in that the upper end of the inmost part (6') comprises a plate (7), which forms a shelter for the fountain when the jet is in action and a table-top or a cover for the basin (1) when the jet is shut.
2. A fountain according to claim 1, which is surrounded by one or several seats (9), the seat comprising members for adjusting its position, which members comprise hydraulic cylinders (10) and/or rotating pistons (11), inlet pipes (12) for conducting water to them from the circulation water pump (2) and outlet pipes (13) for returning the water to the basin (1), which then serves as an expansion tank, as well as electric valves (14) and regulators (15) for electric control of the valves, characterized in that the actuating power for the seat is generated by the circulation water pump (2) of the fountain and that the pipe (3) comprises, after the circulation water pump (2), a valve (16), by which water can be conducted to the regulating members of the seat (9) when the upwards directed telescopic end (5, 6, 6') of the pipe is closed and the plate (7) of the basin (1) is in a low position.

1/3

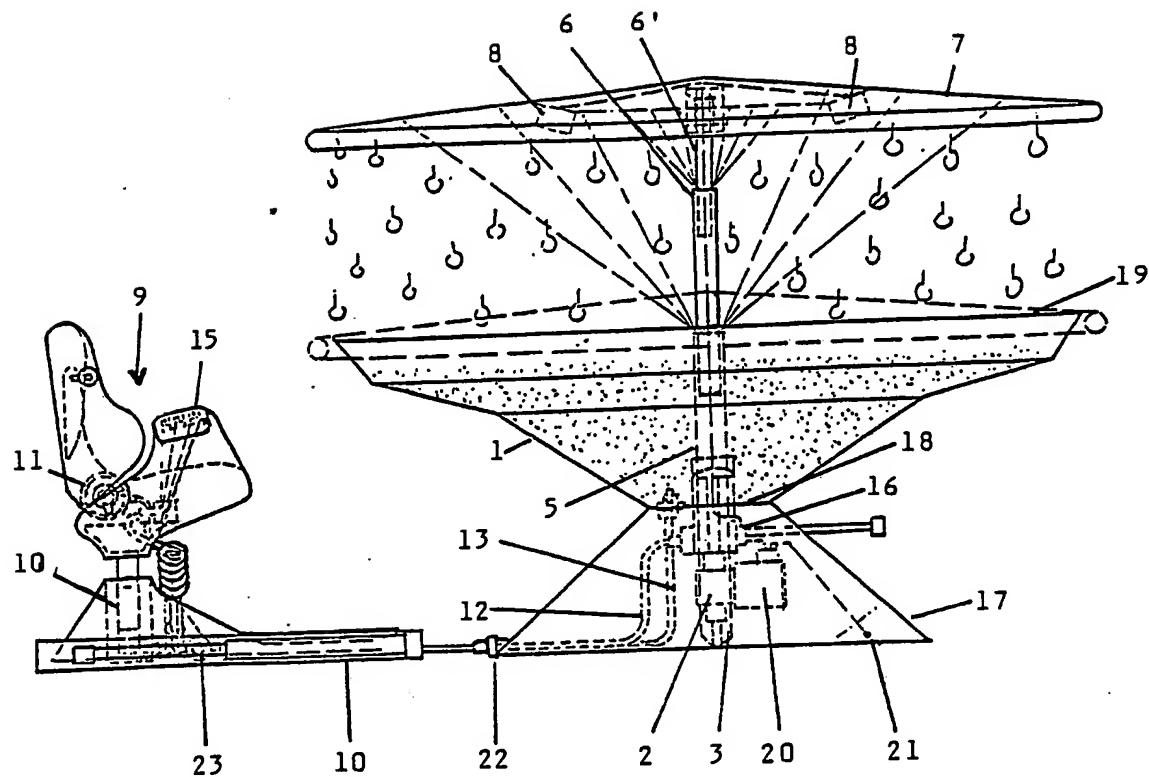


FIG. 1

2/3

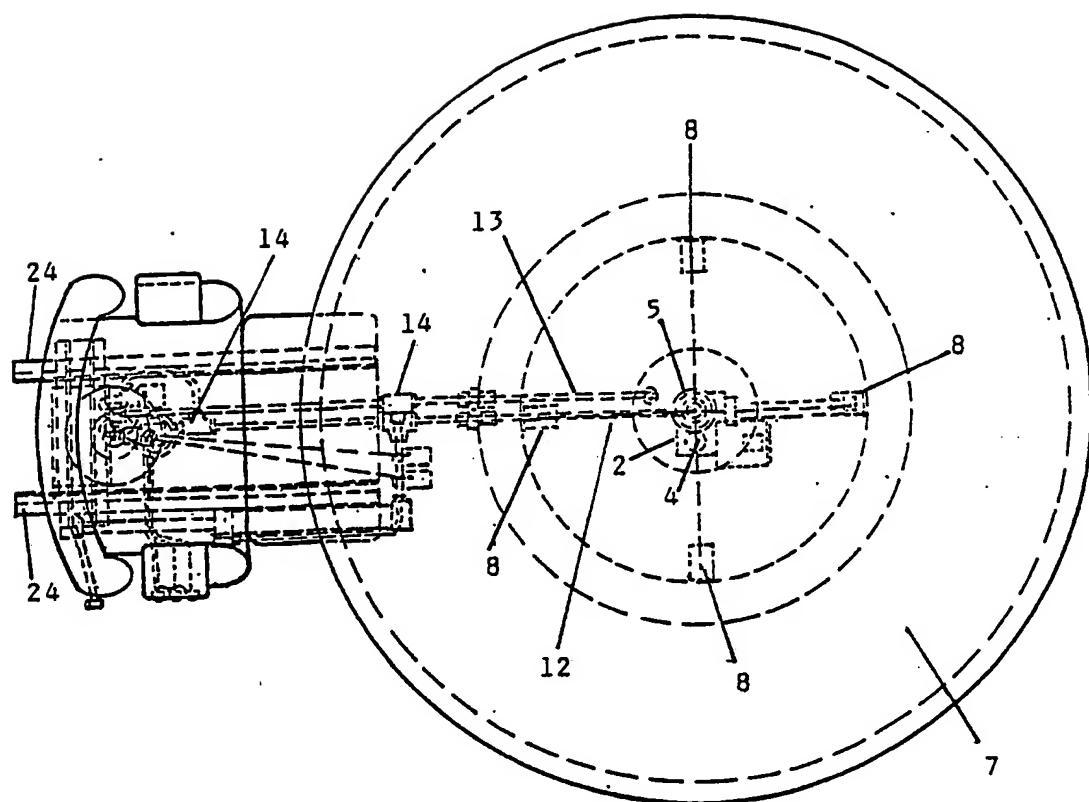


FIG. 2

3/3

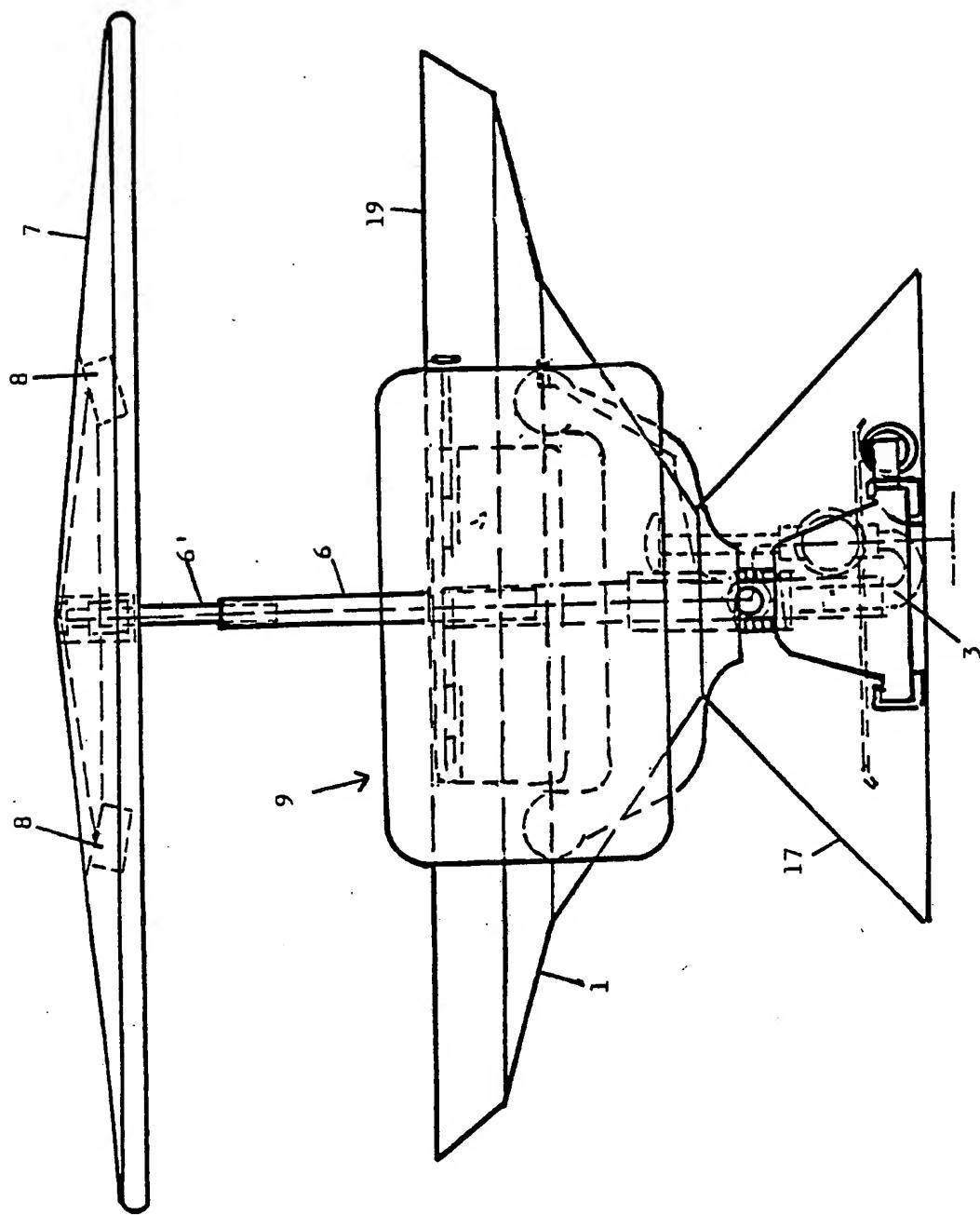


FIG. 3

INTERNATIONAL SEARCH REPORT

International Application No PCT/EP87/00106

I. CLASSIFICATION & SUBJECT MATTER (if several classification symbols apply, indicate all) ⁹

According to International Patent Classification (IPC) or to both National Classification and IPC

4

B 05 B 17/08, F 21 P 7/00

II. FIELDS SEARCHED

Minimum Documentation Searched ⁷

Classification System	Classification Symbols
IPC 4	B 05 B 17/00, /04, /08; F 21 P 7/00
Nat Cl	85g: 1, 2
US Cl	239: 17-23

Documentation Searched other than Minimum Documentation
to the Extent that such Documents are Included in the Fields Searched ⁸

SE, NO, DK, FI classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT¹⁰

Category ¹¹	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
Y	US, A, 3 722 816 (STEWART ET AL) 27 March 1973 & AU, 31386/71	1, 2
Y	US, A, 4 174 808 (LATIN) 20 November 1979	1, 2
Y	US, A, 1 728 456 (M H STUEWE) 17 September 1929	2
A	US, A, 735 017 (G W HAWES) 28 July 1903	1
Y	US, A, 2 005 602 (F THOMSON) 18 June 1935	1, 2
Y	FR, A, 2 171 650 (MICHAELIS M G A C) 21 September 1973 & US, 3814318	1
Y	GB, A, 2 099 125 (THE FILTAPAC COMPANY LIMITED) 1 December 1982	2 .../...

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IV. CERTIFICATION

Data of the Actual Completion of the International Search

1987-11-27

Data of Mailing of this International Search Report

1987-12-02

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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)

Category *	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
A	DE, C, 669 175 (PAUL BAATZ) 24 November 1938	1
A	Derwent's abstract No 86-124305/19, SU 1186-278-A	1
A	Patent abstract of Japan, Vol 9, No 1982 (C-296) publ 1985-04-08	